

Notice of Allowability

Application No.

10/729,666

Examiner

Kibrom K. Gebresilassie

Applicant(s)

SOLLOM ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 01/19/2007.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 3/28/2007.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


KAMINI SHAH
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

1. This communication is responsive to amended application filed on January 19, 2007.
2. Claims 1-30 are pending.
3. Claims 1, 14, and 27 are amended.

Response to Arguments

4. Response to 112, second paragraph, rejection: Applicants are amended Claims 13, and 26 to overcome the rejection and therefore the rejection is withdrawn.
5. Response to 102(e) rejection: Applicant's arguments, see REMARKS page 12 lines 1-5, page 13 lines 17-28, filed January 19, 2007, with respect to Claim 1 have been fully considered and are persuasive. The rejection of 102(e) has been withdrawn.

EXAMINER'S AMENDMENT

6. Amendment to the Specification:

[0001] This application is related to U.S. Patent Application Ser. No. 10/683,029, Now pending, entitled "INSTRUCTION PROCESSOR EMULATION HAVING INTER-PROCESSOR MESSAGING ACCOUNTING," filed October 10, 2003, and U.S. Patent Application Ser. No. 10/683,028, Now US Patent No. 7,096,322, entitled "INSTRUCTION PROCESSOR WRITE BUFFER EMULATION USING EMBEDDED EMULATION CONTROL INSTRUCTIONS," filed October 10, 2003.

7. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kent Sieffert on March 28, 2007.

8. Amendment to the Claims:

Claim 14 (Currently Amended):

A processor-based system for emulating an instruction processor comprising:
a computing system to provide an emulation environment; and
software executing within the emulation environment to emulate an instruction processor having an operand interface and an op-code interface and to emulate a memory external to the instruction processor,

wherein the software emulates the instruction processor by processing read instructions and outputting corresponding read requests on the operand interface ~~or~~ and the op-code interface to independently fetch respective op-codes ~~or~~ and operands from the emulated memory, and independently comparing op-code reference data and operand reference data to operands and op-codes received from the operand interface and the op-code interface in response to the read requests to verify that the memory properly executed the independent read requests.

Claim 27 (Currently Amended):

A processor-based system, for emulating art instruction processor comprising:
compiling means for compiling test software to produce operand reference data, op code reference data,, and an instruction stream having read instructions; and

emulating means for emulating an instruction processor having an operand interface and an op-code interface and for emulating a memory external to the instruction processor, wherein the emulating means comprises:

controlling means for controlling the emulated instruction processor to process the read instructions and output corresponding read requests on the operand interface ~~or~~ and the op-code interface to independently fetch respective operands ~~or~~ and op-codes from the emulated memory,

receiving means for receiving operands and op-codes from the operand interface and the op-code interface in response to the read requests, and

comparing means for independently comparing the op-code reference data and the operand reference ~~data to the received~~ data to the operands and the op-codes received from the operand interface and the op-code interface in response to the read requests to verify that the emulated memory properly executed the read requests.

Allowable Subject Matter

9. Claims 1-30 are allowed.
10. The following is an examiner's statement of reasons for allowance:
 - a. The prior art of reference fails to disclose singly or in combination with another the limitation of "*processing read instructions with an emulated processor executing within an emulation environment to output independent read request via an operand interface and an op-code interface of the emulated processor to independently fetch op-codes and operands from an emulated memory external*

from the emulated processor” as claim 1, “*wherein the software emulates the instruction processor by processing read instructions and outputting corresponding read requests on the operand interface and the op-code interface to independently fetch respective op-codes and operands from the emulated memory*” as claim 14, and/or “*controlling means for controlling the emulated instruction processor to process the read instructions and output corresponding read requests on the operand interface and the op-code interface to independently fetch respective operands and op-codes from the emulated memory*” as claim 27.

b. In addition, claim 27 uses "means for" language and is given deference in view of *In re Donaldson* and interpreted in view of 35 U.S.C. § 112 paragraph 6. The "means for" language and the limitations related thereto of claims are therefore interpreted within the scope of the enablement as provided within the relative embodiment provided in applicant's specification. Specifically, applicant's "means for" language is interpreted as specifically disclosed within the embodiment of the specification as follows:

- compiling means for compiling test software to produce operand reference data, op-code reference data, and an instruction stream: [0024] lines 4-5, [0025], [0047]; Fig. 1 Block 18.
- emulation means for emulating an instruction processor having an operand interface and an op-code interface: [0026], [0027], [0042]; Fig. 2 Block 22, Fig. 5 block 124.

- controlling means for controlling the emulated instruction processor to process the read instruction: [0028], [0034]; Fig. 1 Block 20, Fig. 2 Block 50, Fig. 5 block 134.
 - receiving means for receiving operands and op-codes: [0040]; Fig. 2 block 52.
 - comparing means for independently comparing the op-code reference data and the operand reference data to the operands and the op-codes received from the operand interface and the op-code interface in response to the read requests: [0036], [0037], [0051], [0064]; Fig. 2 blocks 65A and 56B, Fig. 5 blocks 142A and 142B.
- c. Claims 2-13, 15-26, and 28-30 are allowable because they depend directly/indirectly on independent claims 1, 14, and/or 27.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Communications

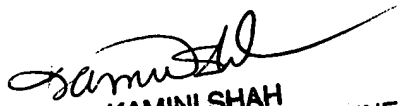
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kibrom K. Gebresilassie whose telephone number is 571-272-8571. The examiner can normally be reached on 8:00 am - 4:30 pm Monday to Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini S. Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KKG


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